

AMENDMENTS TO THE SPECIFICATION

HIGH PERFORMANCE SYSTEM AND METHOD FOR CAPTURING AND ABSORBING RADIATION

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RELATED APPLICATION

This patent application is related to a concurrently-filed patent application Ser. No. 10/720,650 entitled "Simple High Accuracy High Energy Calorimeter" ~~bearing attorney docket number BOEI 1-1198~~, the contents of which are hereby incorporated by reference.

FIELD OF THE INVENTION

The present invention relates generally to high performance systems for capturing energy and, more specifically, to capturing radiation.

BACKGROUND OF THE INVENTION

Many modern devices are capable of outputting high levels of electro-magnetic energy in the form of radiation, such as high-energy lasers and high powered-lamps like solar simulator lamps. In certain circumstances, it is desirable to capture either a portion of or the entire output beam from such devices and, in either case, reduce the back-reflected and/or scattered radiation to zero. When a device is used to simply capture all or part of the radiant

Referring now to FIGURE 2, a plurality of fasteners 50 extend through the clamp 20 and attach the beam capture device 10 to the support structure 23, such as an outlet port (not shown) of a device (not shown) for generating the beam of radiation.

The beam capture device 10 is designed to work without subjecting the body 18 to substantial local heating and to do so without active cooling. Yet because the beam capture device 10 will capture and absorb substantially all of the energy of the beam 14, there may be circumstances where it may be desirable to cool the beam capture device 10. Such cooling may be desired after use in order to return the body of the device 10 to the starting temperature so that it may be used again. If the input energy is high enough, successive runs without either active cooling or sufficient time for passive cooling may drive the bulk temperature of the device 10 above the melting temperature of the materials. Further, if the input energy is high enough, the device 10 may reach temperatures that pose a safety hazard to personnel or equipment.

In one exemplary embodiment, an inlet port 52 is arranged to be coupled to receive any acceptable coolant from a cooling system (not shown). An inlet header 54 extends into the body 18 and supplies coolant to a plurality of coolant channels 56 that extend throughout the body 18. The coolant channels 56 connect to an outlet header (not shown) that terminates at an outlet port 58. Cooling may be performed while the device 10 is exposed to radiation, after exposure to radiation, or both. It will be appreciated that any acceptable cooling system known in the art may be used to remove heat from the body 18. However, an exemplary cooling system that is well suited for use with the beam capture device 10 is set forth in concurrently filed U.S. Patent Application Ser. No. 10/720,650 entitled "Simple High Accuracy High Energy Calorimeter"—~~bearing attorney docket number BOEI-1-1198~~, the contents of which are hereby incorporated by reference.

Referring now to FIGURE 3, the opening 24 advantageously defines an aperture 25 in the body 18 that is larger than a footprint of the beam 14. It will be appreciated that the